

CLAIMS

What is claimed is:

1. An implant for replacing opposed articulating bone ends adjacent a skeletal joint, the implant comprising:
 - a first component to replace a portion of one of the opposed articulating bone ends;
 - a second component to replace a portion of the other of the opposed articulating bone ends, the second component having means for low friction articulation with the first component and means for engaging the first component to constrain the motion between the first and second components, the means for low friction articulation including a first material exhibiting low wear and having a predetermined toughness value, and the means for engaging including a second material having a predetermined toughness value higher than the means for low friction articulation.
2. The implant of claim 1 wherein the first and second materials comprise polymers.
3. The implant of claim 2 wherein the first material comprises crosslinked polyethylene and the second material comprises uncrosslinked polyethylene.
4. The implant of claim 1 wherein the first material comprises relatively highly crosslinked polyethylene and the second material comprises relatively lightly crosslinked polyethylene.
5. The implant of claim 1 wherein the first and second materials are different materials selected from the same class of materials.
6. The implant of claim 5 wherein the first material comprises polyethylene and the second material comprises a poly(ketone).

7. The implant of claim 1 wherein the first and second materials are selected from different classes of materials.
8. The implant of claim 7 wherein the first material comprises a polymer and the second material comprises a metal.
9. The implant of claim 7 wherein the first material comprises a ceramic and the second material comprises a polymer.
10. The implant of claim 1 wherein the means for low friction articulation and the means for engaging are mechanically joined to form a one-piece bearing component.
11. A tibial bearing component for replacing a portion of the proximal tibial surface of a knee joint, the component comprising:
 - a first portion having a bearing surface, the bearing surface having a region exhibiting low wear bearing performance and having a first predetermined toughness value; and
 - a second portion having an intercondylar region, the intercondylar region having a region having a second predetermined toughness value, the second predetermined toughness value being greater than the first predetermined toughness value, the first and second portions being joined together to form a tibial bearing component.
12. The implant of claim 11 wherein the first and second portions are provided in sets of modular first and second portions that can be selectively joined together intraoperatively.
13. The implant of claim 11 wherein the first and second portions are permanently joined together at the time of manufacture.

14. The implant of claim 11 further comprising at least one pin and wherein the first and second portions are joined together by the pin extending into each of the first and second portions.
15. The implant of claim 11 wherein one of the first and second portions includes a dovetail projection and the other of the first and second portions includes a dovetail slot and the first and second portions are joined together by engaging the dovetail projection with the dovetail slot.
16. The implant of claim 6 wherein the first portion comprises crosslinked polyethylene and the second portion comprises uncrosslinked polyethylene.
17. The implant of claim 6 wherein the first portion comprises relatively highly crosslinked polyethylene and the second portion comprises relatively lightly crosslinked polyethylene.
18. The implant of claim 11 wherein the second portion comprises an intercondylar eminence and a unitary tray extending from the intercondylar eminence, the tray including a support surface for receiving the first portion.
19. A tibial implant for a knee joint, the implant comprising:
first and second bearing portions, each of the first and second bearing portions
including an articular surface; and
an intercondylar portion interposed between the first and second bearing portions, the
first bearing portion, second bearing portion, and intercondylar portion
forming three separate subcomponents mechanically joined together to form a
single component.

20. The implant of claim 19 wherein the first and second bearing portions each have a first predetermined toughness value and the intercondylar portion has a second predetermined toughness value greater than the first predetermined toughness value of the bearing portions.
21. The implant of claim 19 wherein the intercondylar portion comprises a tibial tray including a tibial eminence, the first and second bearing portions being received by the tray with the eminence interposed therebetween.